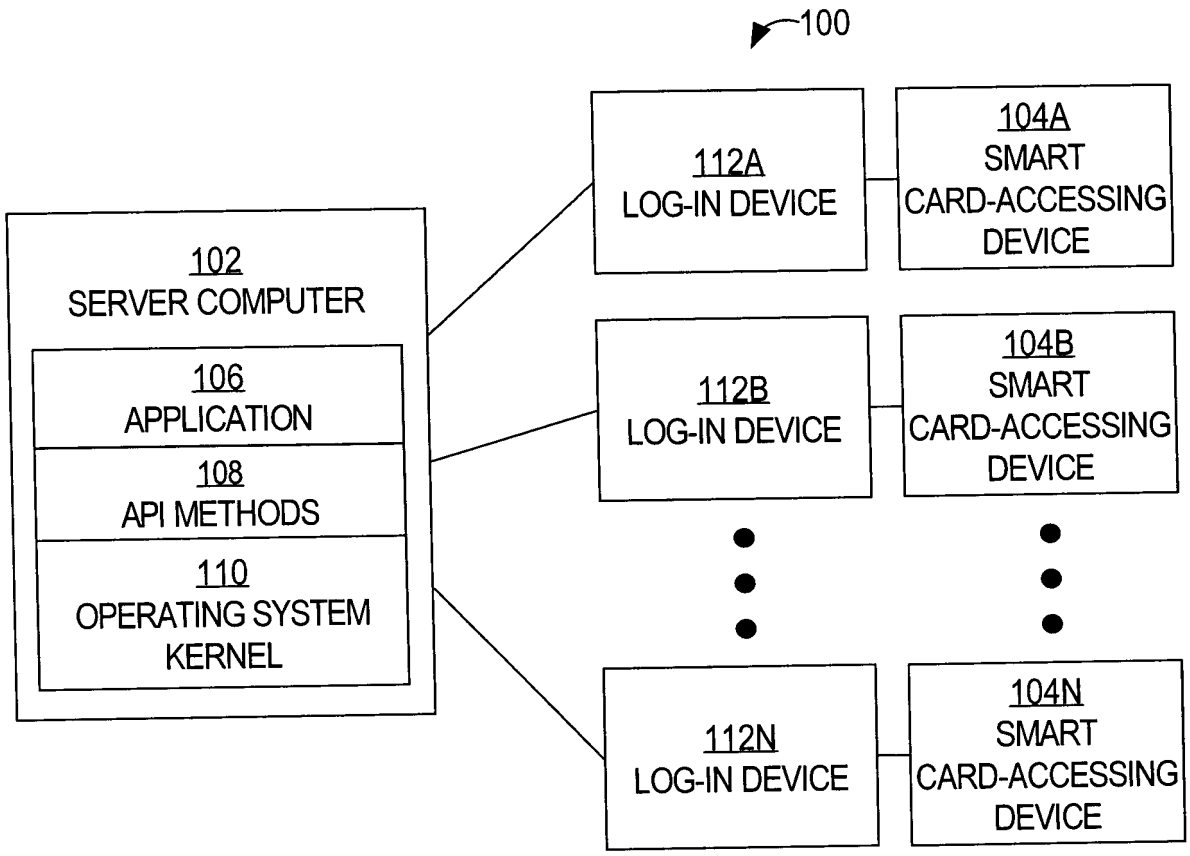
100
102
SERVER COMPUTER
106
APPLICATION
108
API METHODS
110
OPERATING SYSTEM
KERNEL
112A
LOG-IN DEVICE
104A
SMART
CARD-ACCESSING
DEVICE
112B
LOG-IN DEVICE
104B
SMART
CARD-ACCESSING
DEVICE
112N
LOG-IN DEVICE
104N
SMART
CARD-ACCESSING
DEVICE

FIG. 1

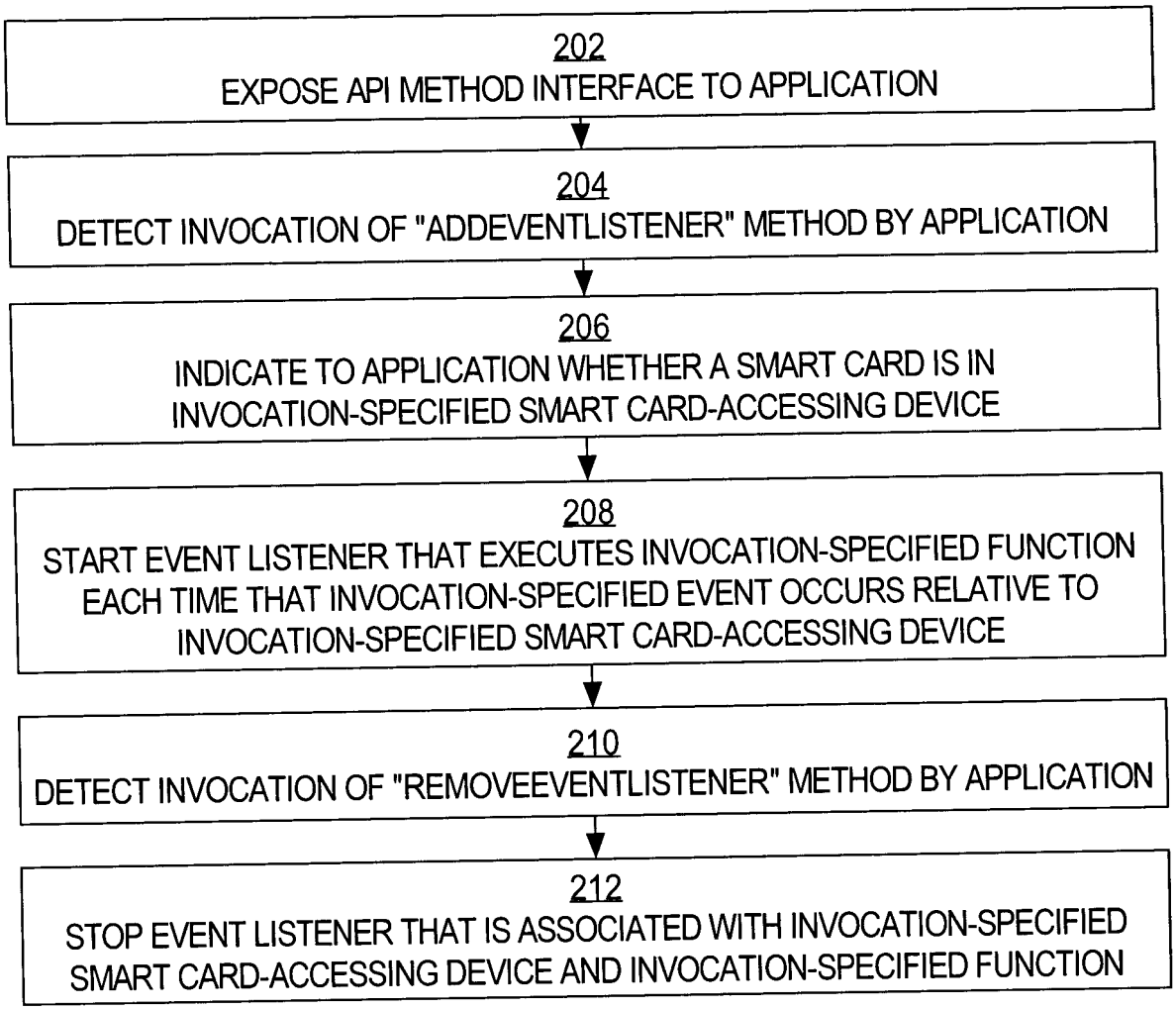
202
EXPOSE API METHOD INTERFACE TO APPLICATION
204
DETECT INVOCATION OF "ADDEVENTLISTENER" METHOD BY APPLICATION
206
INDICATE TO APPLICATION WHETHER A SMART CARD IS IN INVOCATION-SPECIFIED SMART CARD-ACCESSING DEVICE
208
START EVENT LISTENER THAT EXECUTES INVOCATION-SPECIFIED FUNCTION EACH TIME THAT INVOCATION-SPECIFIED EVENT OCCURS RELATIVE TO INVOCATION-SPECIFIED SMART CARD-ACCESSING DEVICE
210
DETECT INVOCATION OF "REMOVEEVENTLISTENER" METHOD BY APPLICATION
212
STOP EVENT LISTENER THAT IS ASSOCIATED WITH INVOCATION-SPECIFIED SMART CARD-ACCESSING DEVICE AND INVOCATION-SPECIFIED FUNCTION

FIG. 2

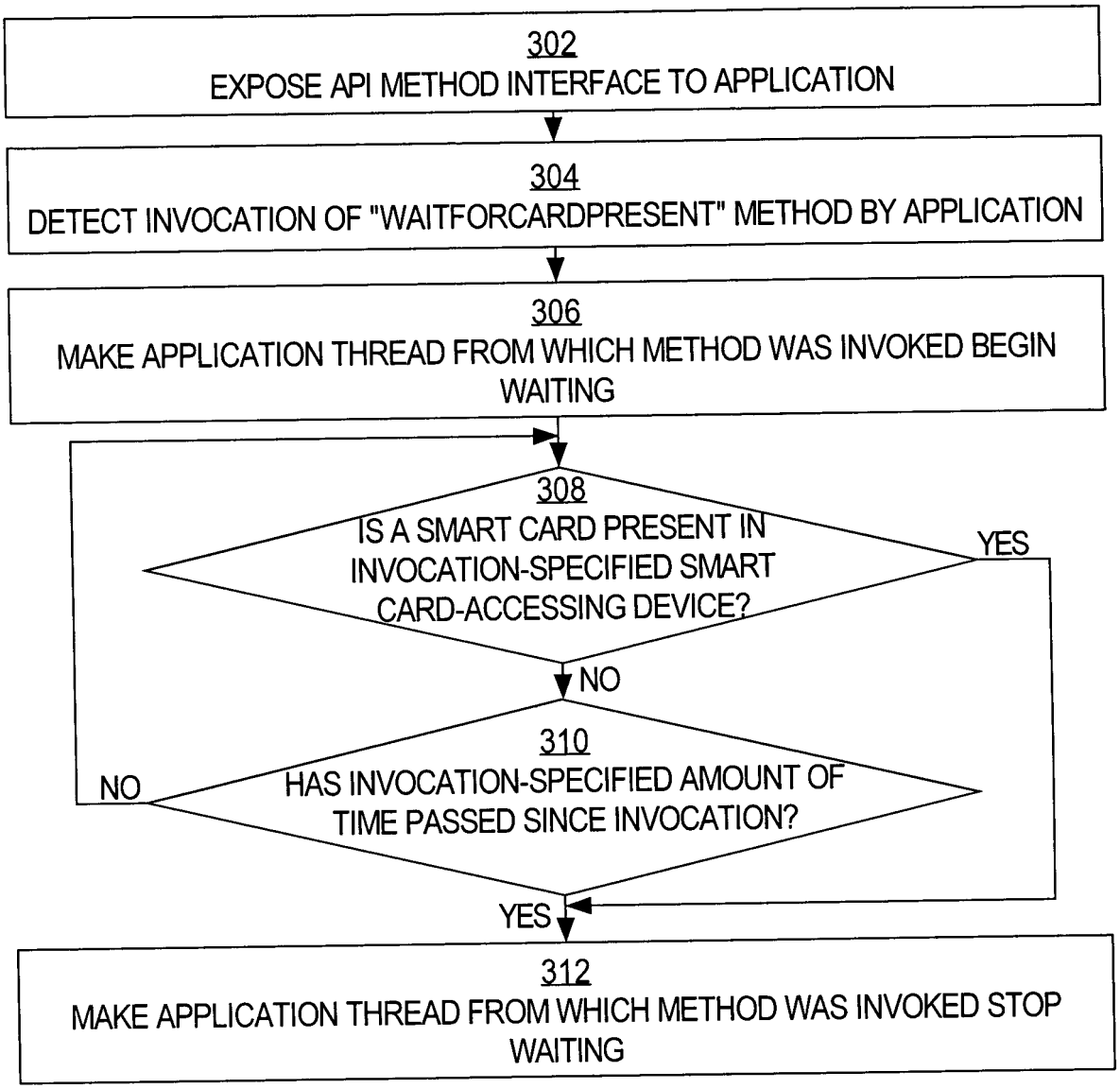
302
EXPOSE API METHOD INTERFACE TO APPLICATION
304
DETECT INVOCATION OF "WAITFORCARDPRESENT" METHOD BY APPLICATION
306
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED BEGIN WAITING
308
IS A SMART CARD PRESENT IN INVOCATION-SPECIFIED SMART CARD-ACCESSING DEVICE?
YES
NO
310
HAS INVOCATION-SPECIFIED AMOUNT OF TIME PASSED SINCE INVOCATION?
NO
YES
312
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED STOP WAITING

FIG. 3

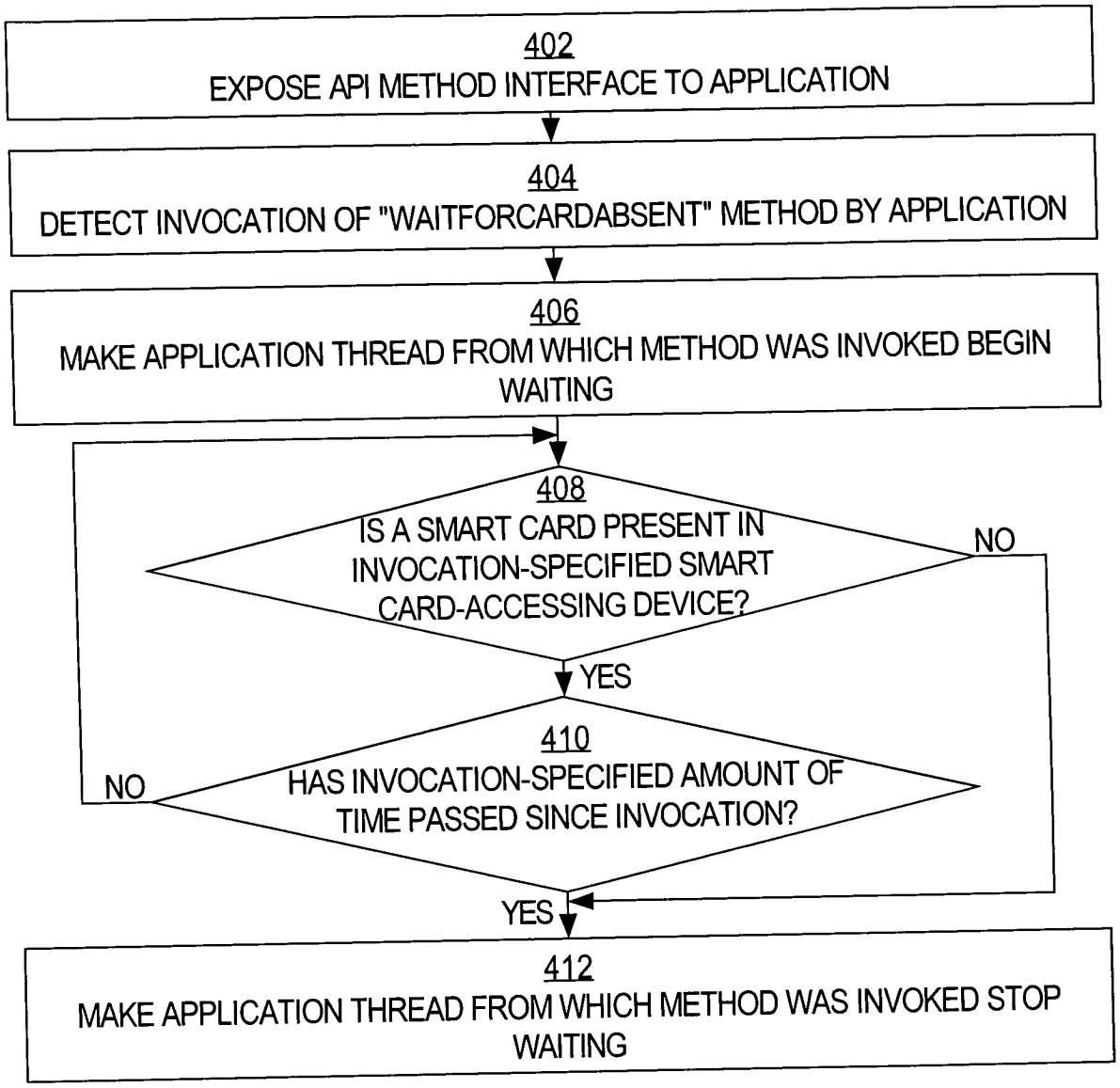
402
EXPOSE API METHOD INTERFACE TO APPLICATION
404
DETECT INVOCATION OF "WAITFORCARDABSENT" METHOD BY APPLICATION
406
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED BEGIN WAITING
408
IS A SMART CARD PRESENT IN INVOCATION-SPECIFIED SMART CARD-ACCESSING DEVICE?
NO
YES
410
HAS INVOCATION-SPECIFIED AMOUNT OF TIME PASSED SINCE INVOCATION?
NO
YES
412
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED STOP WAITING

FIG. 4

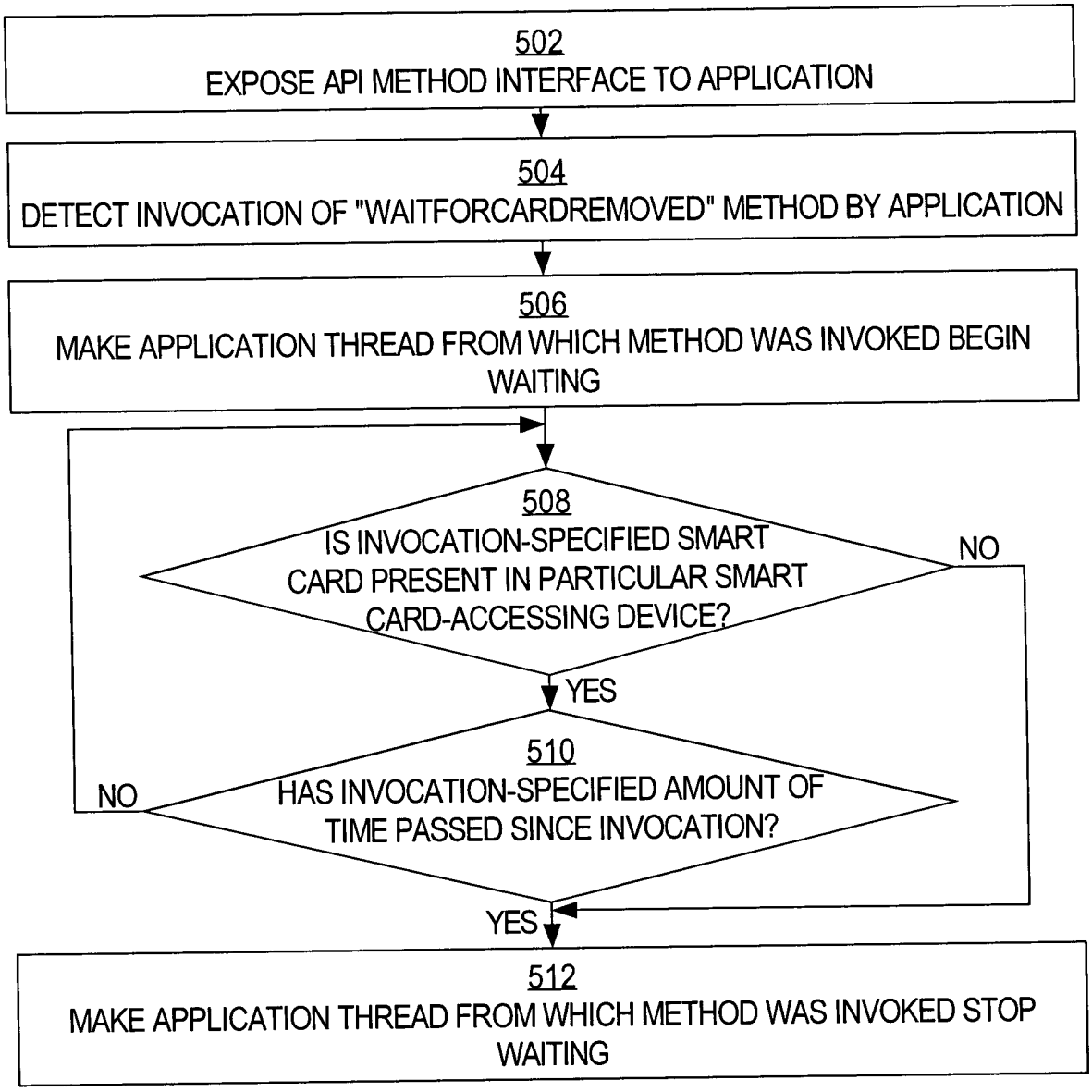
502
EXPOSE API METHOD INTERFACE TO APPLICATION
504
DETECT INVOCATION OF "WAITFORCARDREMOVED" METHOD BY APPLICATION
506
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED BEGIN WAITING
508
IS INVOCATION-SPECIFIED SMART CARD PRESENT IN PARTICULAR SMART CARD-ACCESSING DEVICE?
NO
YES
510
HAS INVOCATION-SPECIFIED AMOUNT OF TIME PASSED SINCE INVOCATION?
NO
YES
512
MAKE APPLICATION THREAD FROM WHICH METHOD WAS INVOKED STOP WAITING

FIG. 5

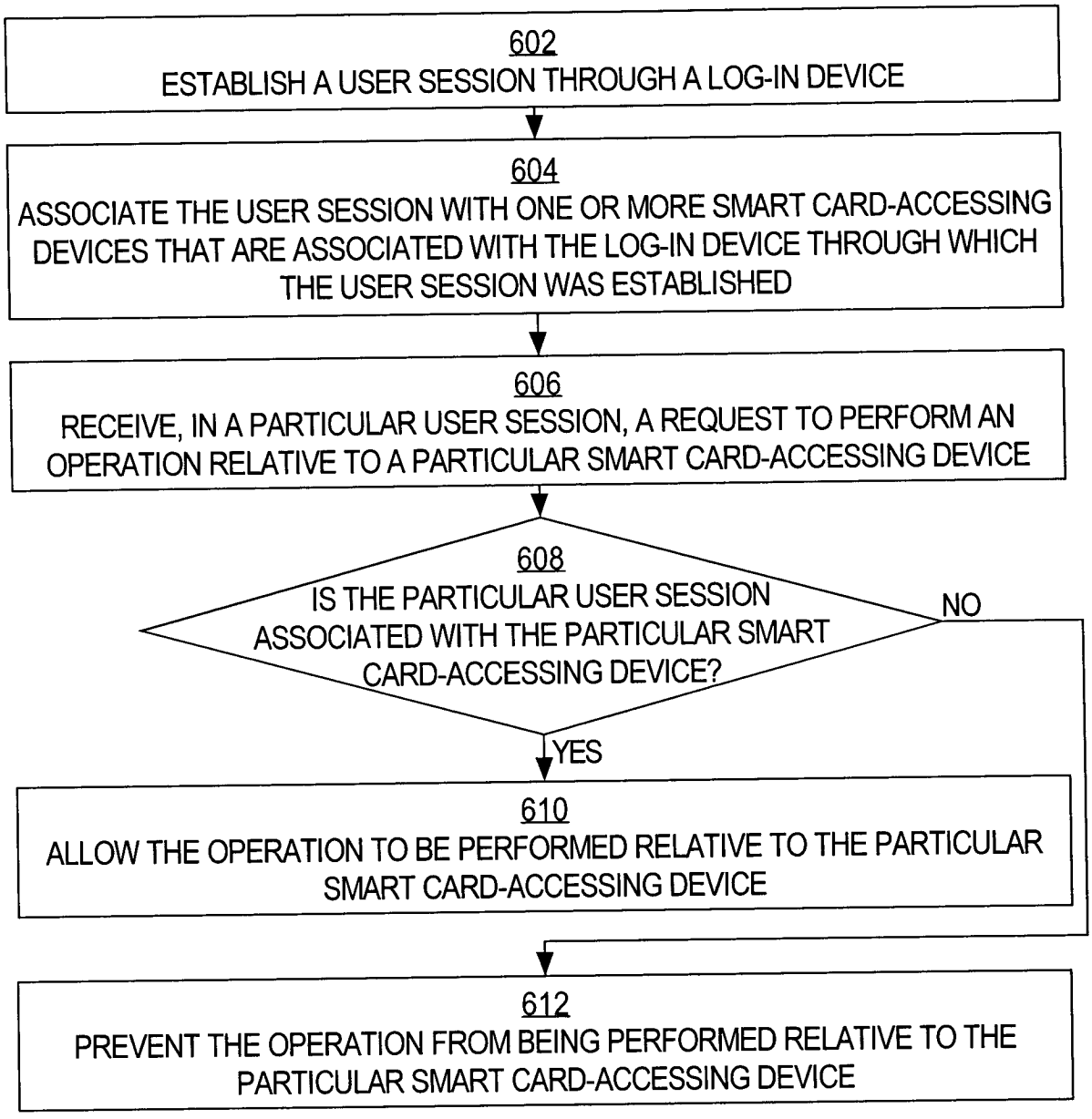
602
ESTABLISH A USER SESSION THROUGH A LOG-IN DEVICE
604
ASSOCIATE THE USER SESSION WITH ONE OR MORE SMART CARD-ACCESSING DEVICES THAT ARE ASSOCIATED WITH THE LOG-IN DEVICE THROUGH WHICH THE USER SESSION WAS ESTABLISHED
606
RECEIVE, IN A PARTICULAR USER SESSION, A REQUEST TO PERFORM AN OPERATION RELATIVE TO A PARTICULAR SMART CARD-ACCESSING DEVICE
608
IS THE PARTICULAR USER SESSION ASSOCIATED WITH THE PARTICULAR SMART CARD-ACCESSING DEVICE?
NO
YES
610
ALLOW THE OPERATION TO BE PERFORMED RELATIVE TO THE PARTICULAR SMART CARD-ACCESSING DEVICE
612
PREVENT THE OPERATION FROM BEING PERFORMED RELATIVE TO THE PARTICULAR SMART CARD-ACCESSING DEVICE

FIG. 6

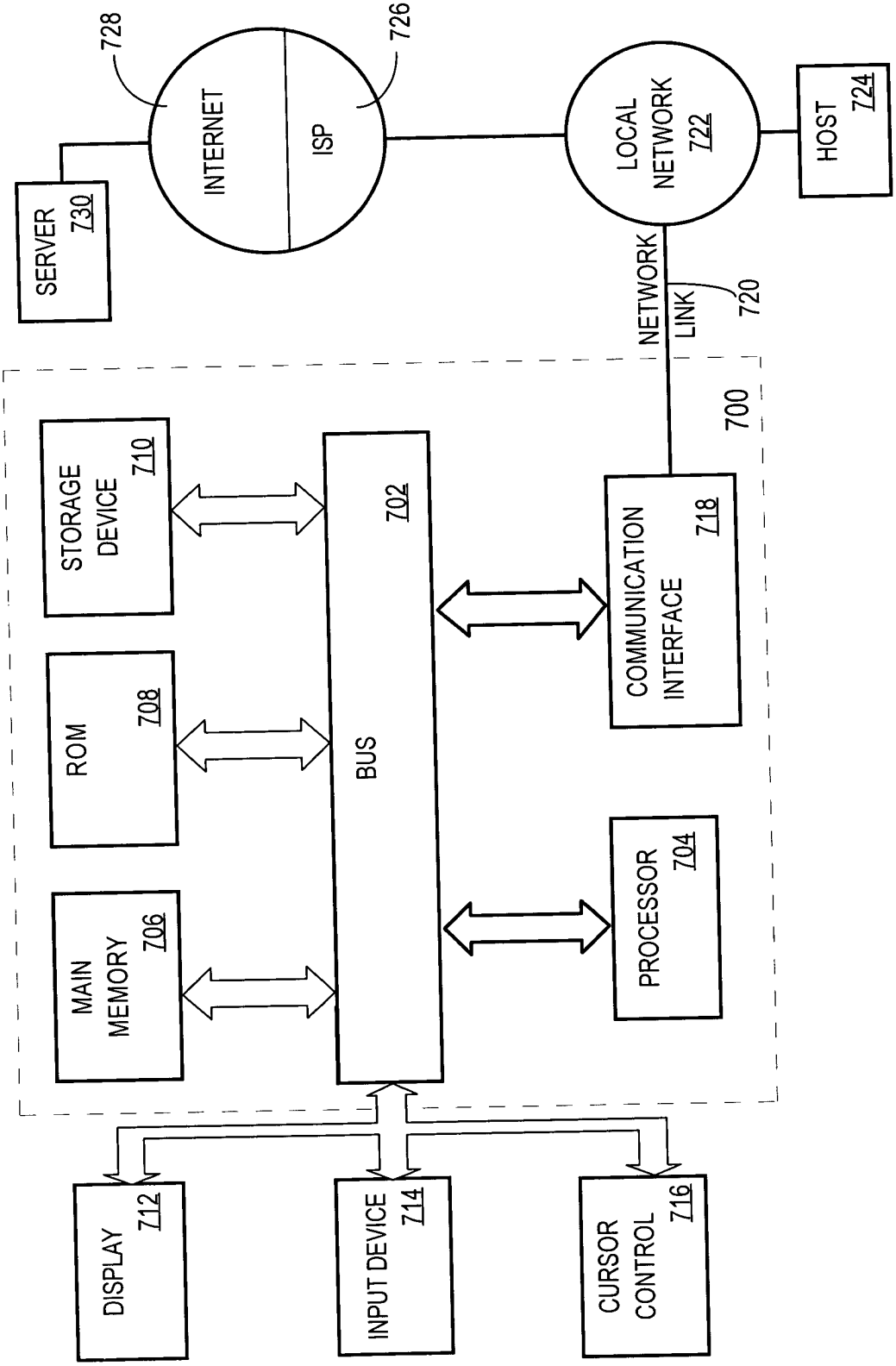
728
726
INTERNET
ISP
LOCAL NETWORK 722
HOST 724
SERVER 730
NETWORK LINK 720
700
STORAGE DEVICE 710
ROM 708
MAIN MEMORY 706
BUS 702
COMMUNICATION INTERFACE 718
PROCESSOR 704
DISPLAY 712
INPUT DEVICE 714
CURSOR CONTROL 716

FIG. 7